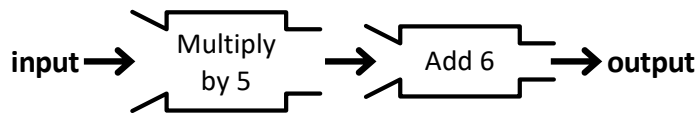
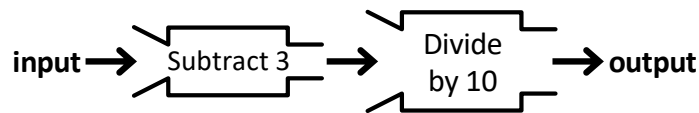


Q8 Here is a function machine.



- [a] Work out the output when the input is 12.
- [b] Work out the output when the input is 30.
- [c] Work out the input when the output is 206.
- [d] Work out the input when the output is 81.

Q9 Here is a function machine.



- [a] Work out the output when the input is 13.
- [b] Work out the output when the input is 22.
- [c] Work out the input when the output is 9.1.
- [d] Work out the input when the output is 1.2.

Q10 Fill in the blanks to complete each table for the following function machines.

[a] input $\rightarrow$ $\times 4$ $\rightarrow$ $- 5$ $\rightarrow$ output

Input	5	11	7	25				
Output					27	155	87	195

[b] input $\rightarrow$ $\div 2$ $\rightarrow$ $+ 3$ $\rightarrow$ output

Input	30	8	14	26				
Output					50	55	98	43

[c] input $\rightarrow$ $- 7$ $\rightarrow$ $\times 2$ $\rightarrow$ output

Input	7			32		8		40
Output		20	6		34		63	

[d] input $\rightarrow$ $\times 3$ $\rightarrow$ $- 4$ $\rightarrow$ output

Input	1			20		32	41	
Output		41	14		50			131

[e] input $\rightarrow$ $+ 5$ $\rightarrow$ $\div 10$ $\rightarrow$ output

Input	15	20	45					80
Output				4.7	6	8.9	16	

[f] input $\rightarrow$ $\times 2$ $\rightarrow$ $- 8$ $\rightarrow$ output

Input	10	3		31				17
Output			36		28	78	50	

Q11 Draw the function machines that undo the function machines below.

[a] input $\rightarrow$ $\times 3$ $\rightarrow$ $- 2$ $\rightarrow$ output

[b] input $\rightarrow$ $+ 7$ $\rightarrow$ $\div 5$ $\rightarrow$ output

[c] input $\rightarrow$ $- 4$ $\rightarrow$ $\times 9$ $\rightarrow$ output

Q12 Write, in words, the opposite functions of the following.

- [a] Multiply by 9, subtract 4
- [b] Add 12, multiply by 3
- [c] Subtract 8, divide by 5
- [d] Subtract 2, multiply by 11
- [e] Square, add 20

Q13 Use function machines to solve the following problems.

- [a] To convert degrees Celcius ($^{\circ}\text{C}$), to degrees Fahrenheit ($^{\circ}\text{F}$), you can double $^{\circ}\text{C}$ and add 30. What is the temperature in $^{\circ}\text{F}$ when it is 18°C ?
- [b] To find the price of a lift with Fairfield Taxis, you multiply the number of miles travelled by £0.80 and add £3.50. What is the price of a taxi taken to travel 15 miles?
- [c] To get her father's age, Emma multiplies her own age by 6 and then subtracts 4. How old is her father when Emma is 7 years old?
- [d] A school is raising money for charity. The government says they will triple the amount raised and add £500. The school raises £820. How much money is raised for charity in total?

Q14 Jonathan adds 12 years to his age and then divides it by 8 to get the age of his son Clark.

- [a] Represent this on a function machine.
- [b] Clark is 5 years old. How old is Jonathan?
- [c] Draw the opposite function machine.

Q15 Here is a function machine.

- [a] $y = 5x + 2$
- [b] $y = 3(x - 1)$
- [c] $y = \frac{x + 6}{5}$